



GMDSS LABORATORY

The Training Institution Constanta Maritime University (CMU) has passed the TELENOR , NORWAY GMDSS Audit for GMDSS Training programme according to STCW95 Convention and CMU was certified as Recognised Training Provider.

■ **GMDSS Laboratory: *Teaching facilities and equipments***

For practical training in order to obtain GMDSS GOC, Constanta Maritime University use The GMDSS Laboratory, an adequate working space and separate working areas as course rooms properly equipped. GMDSS LABORATORY in Constanta Maritime University is endowed by video projector, PCs, plasma TV and so on.

All facilities and equipment used for GMDSS GOC training are type approved for installation and are suitable for the practical demonstrations and exercises to be undertaken in accordance with the specific objectives of the training.

GMDSS LABORATORY in Constanta Maritime University is endowed by NORCONTROL CAPELLA 5.1 GMDSS SIMULATOR and Real GMDSS Console: SEA 3 (Ship Station Licence No A/7014/2009 and other radio systems and equipments described as follows (see Annex 2.1 – MCU GMDSS Laboratory - GMDSS SEA 300 GMDSS CONSOLE (real GMDSS CONSOLE) & OTHER EQUIPMENTS & NORCONTROL CAPELLA GMDSS SIMULATOR).

A. The NORCONTROL CAPELLA 5.1 GMDSS Simulator, designated and implemented by Kongsberg Maritime Ship Systems (KMSS) Norway, incorporates all communication equipments applicable to four sea-areas (A1 to A4) as determined by the IMO/SOLAS GMDSS regulations.

The GMDSS Simulator is used to train our students in order to obtain:

- *General Operator's Certificate for the Global Maritime Distress and Safety* – GOC;
- *Restricted Operator's Certificate for the Global Maritime Distress and Safety* - ROC;
- *Long Range Operator's Certificate for the Global Maritime Distress and Safety* – LRC;
- *Short Range Operator's Certificate for the Global Maritime Distress and Safety* – SRC.

The NORCONTROL CAPELLA GMDSS Simulator consists of:

- one **Instructor Station** for full exercises and system control
- and 10 **Student Stations** enabling all GMDSS COMMUNICATIONS TRAINING CAPABILITIES.

All terrestrial and satellite systems or equipments are implemented in The GMDSS NORCONTROL CAPELLA Simulator:

- VHF/MF/HF radio systems;
- VHF/MF/HF DSC CONTROLLERS, NBDP Data Terminals,
- INMARSAT B, C, M;
- NAVTEX receiver;
- EPIRB COSPAS-SARSAT- 406 MHz;
- SART X Band (9,5 GHz).

The flexible design allows the users to specify the communication equipment required to satisfy any individual training needs. The GMDSS Simulator can be used for SAR (Search and Rescue) simulated operations in a multi ship environment.

The NORCONTROL CAPELLA GMDSS Simulator, KMSS Norway is certificated by TELENOR, Division Maritime Radio, Norway, as in full compliance with and direct functional and pedagogical evaluation according to STCW95 and TELENOR requirements.

TELENOR, Division Maritime Radio, Norway recommend The NORCONTROL CAPELLA GMDSS Simulator, KMSS Norway, for GMDSS training at any national

and international university, academy and special GMDSS training institutions.

NORCONTROL CAPELLA GMDSS Simulator manufactured by KONGSBERG MARITIME NORVEGIA, purchased by Constanta Maritime University was assessed by the ANCOM (NATIONAL AUTHORITY FOR COMMUNICATION) – BUCHAREST, ROMANIA – the national competent body in the field, as complying with the requirements for training and certification as specified in the decision CEPT ERC / Dec/ (99) 01; this document is the basis for the activity of this authority regarding the assessment of the maritime radio operators.

B. Real GMDSS Console: *SEA 3 (Ship Station) for A1, A1+A2, A1+A2+A3, A1+A2+A3+A4 GMDSS areas:*

SHIP STATION LICENCE No. A/7014/2009

ISSUING ADMINISTRATION: ANCOM (NATIONAL AUTHORITY FOR MANAGEMENT AND REGULATION IN COMMUNICATIONS) / BUCURESTI, ROMANIA

ISSUED 12/02/2009. VALID UNTIL 11.02.2014

**SHIP NAME: UMC SCHOOL;
MMSI: 264999907**

**CALLSIGN: YPMJ
SELCALL: 57953
IMN (SES INMARSAT C): 426400044
AAIC: RM12**

1. one fully operational MF/HF transmitter/receiver set for radiotelephone, NBDP and DSC, and MF/HF DSC controller (connected on real antenna): - SEA 330-MF/HF/SSB Radio System & SEACALL 7000 MF/HF DSC CONTROLLER & SEATOR 3000 - HF RADIO TELEX modem and SEA 6606 TOR data terminal;
2. one dedicated MF/HF watch receiver for the DSC Distress frequencies:- SEAWATCH SEA.
3. two fully operational VHF-DSC radio equipments, connected on real antenna: –

- SEA7156 VHF marine radiotelephone & SEACALL 7100 VHF DSC controller + SIMRAD RD 68 VHF marine radio station with integrated class DDS controller;
4. a SES INMARSAT C with EGC receiver facility, connected on real antenna and commissioned in INMARSAT System: - SEASAT3 –SEA 6003 & SEA 6606 message terminal GMDSS INMARSAT C-system
 5. one NAVTEX receiver connected on real antenna: - JRC NRC 300 A NAVTEX RECEIVER.
 6. 2 two-way portable VHF radiotelephone with charging arrangement: - *Survival Craft (Portable) GMDSS Maritime VHF radiotelephone type IC –GM1600E* – (battery for emergency only: type BP 234 Lithium battery pack (Lithium, 9.0V, 3300mAh), validity until July 2013) & battery charging for on board use only: type BP 252 Lithium battery (Li-ion, 7.4V, 980mAh);
 7. one real EPIRB 406 MHz, Model: SIMRAD EP50: AUTO, with 406 MHz Cospas Sarsat Distress Beacon Registration Card (EPIRB Battery expiry date: June, 2014), Hydrostatic release - hydrostatic release expiry date: April 2011, Manufacturer: SIMRAD, U. K, age: 0)
 - i. Serial Number 100-14549,
 - ii. With:

406 MHz COSPAS SARSAT DISTRESS BEACON REGISTRATION CARD
(COSPAS SARSAT Type Approval Number- 163);
PROGRAMMING CERTIFICATE:
Flag: 264 Romania;
Coding: MMSI: 264999907;
Protocol: MMSI;
Unique ID: A10830C30CD70D1
Programmed Message: FF FE 2F 50 84 18 61
86 6B 86 89 73 60 90
406 MHz BEACON WARRANTY FORM;
406 MHz EPIRB- Shore –based Maintenance Record (in accordance with IMO Guidelines IMO MSC/Circ 1039) (validity until April 22, 2014;
 8. one EPIRB 406 MHz-121,5 MHz):- Lo-kata with hydrostatic release mechanism;
 9. one real SART 9,5 GHz, SIMRAD SA50 (Manufacturer: SIMRAD, U. K, age: 0) with
 - a. Non hazardous Lithium battery (SART Battery expiry date: June, 2014) and

- b. Annual SART TEST REPORT (validity until April 22, 2010);
- 10. one SART 9.5 GHz: - *SART Mc MURDO MARINE RT 9-3*.
- 11. 3 pieces Handheld VHF Maritime Radiotelephone type *HUSUN 3110* including extrabattery and chargers (*Husun Battery Charger SP3911*);
- 12. 3 pieces Survival Craft (Portable) GMDSS Maritime VHF radiotelephone type *JOTRON Tron VHF*;

C. other radio systems and equipments

- 1. one fully operational MF/HF transmitter/receiver set for radiotelephone, NBDP and DSC, including MF/HF DSC controller connected on dummy antenna for **back-to-back** connections: - *ICOM IC-M801 MF/HF Marine SSB Transceiver & Combined DSC/MF/HF (Class A DSC)*;
- 2. two fully operational VHF transmitter/receiver for radiotelephony and DSC, and /or incorporating a DSC watch receiver for channel 70, connected on dummy antennas):- – *SEA7156 VHF marine radiotelephone & SEACALL 7100 VHF DSC controller + ICOM IC M421 - VHF MARINE radio station & VHF DSC Controller*;
- 3. a dummy satellite EPIRB (406 MHz):- *Lo-kata* with hydrostatic release mechanism;
- 4. dummy SART adapted for training.
- 5. one GPS receiver connected on real antenna: - *FURUNO*.
- 6. one AIS model AI3000 connected on real antenna: - AIS – AI 3000 EURONAV;

The radio communication systems and equipments operate from CMU's main supply, stepped down to 24 V DC. There is also a reserve source of energy for radio equipments. The equipments and systems are individually fused (ref COMSAR / Circ 2), in order to protect the equipment and the operator in the event of fault.

■ Teaching aids (A)

Classrooms facilities include: a blackboard, whiteboard, flipchart, overhead projector, video projector, PCs, plasma TV. For audio- visual material such as video files, videos, slides, etc. the appropriate equipment is available. (A*)

For practical training, we use The GMDSS Laboratory, an adequate working space and classrooms appropriately equipped.

Other teaching aids are listed below.

A1	General operator's Certificate for the Global Maritime Distress and Safety System, Course + Compendium, Model Course IMO 1.25, Printed by PMS UK Ltd London, 2004.
A2	NORCONTROL CAPELLA 5.1 GMDSS SIMULATOR and PC programs, including documentation, for the simulation of terrestrial and satellite communication and distress alerting systems and equipments. Real console SEA 3.
A3	User manuals for all installed GMDSS equipment (printed or and video, audio files).
A4	Radio Log-book
A5	Real terrestrial and satellite communication and distress alerting systems and equipments, adapted for training and assessment. (Demonstration equipment (SARTs, portable GMDSS VHF's, EPIRBs, and so on).
A6	Real equipment as VHF, VHF-DSC, MF/HF including NBDP and DSC and INAMRSAT-C, NAVTEX, AIS, SART, EPIRB.
A7	INSTRUCTOR'S PACK GMDSS/ GOC (INCLUDING SEARCH AND RESCUE SAR EXERCISES ON CD), Poseidon Education, Leknes, Norway, 2008.

■ **IMO References (R)**

R1	<i>GMDSS Manual - Global Maritime Distress and Safety System Manual</i> , London, IMO, London, U.K., 2007.
R2	Merchant Ship Search and Rescue Manual (MERSAR) , IMO, 1993

R3	IMO Standard Marine Communications Phrases + CD, IMO publication, London, 2005.
R4	Master Plan of the shore-based facilities for the GMDSS
R5	STCW Convention - International Convention on Standards of Training, Certification and Watchkeeping for Seafarers / STCW Code -Seafarers' Training, Certification and Watchkeeping Code as amended 1995 & subsequent amendments to the Convention and Code, IMO, London, 2001.
R6	Resolution A. 814 (19)
R7	SOLAS-International Convention for the Safety of Life at Sea, 2004 consolidated Edition, IMO, London, 2004. 2. SOLAS Amendments 2003, 2004, &2005. 3. SOLAS Amendments 2006.

■ Textbooks (T)

T1	<i>ITU -MANUAL FOR THE MARITIME MOBILE AND MARITIME MOBILE SATELLITE SERVICES</i> , RADIOCOMMUNICATION BUREAU, Geneva, English Edition 2009.
T2	.1. <i>ITU - LIST OF COAST STATIONS</i> , Geneva, 2009.
	.2. <i>ITU -LIST OF RADIODETERMINATON AND SPECIAL SERVICE STATIONS</i> , Geneva 2008.
	.3. <i>ITU- LIST OF CALL SIGN AND NUMERICAL IDENTITIES</i> , ITU, Geneva, 2009
	.4. <i>ITU- LIST OF SHIP STATIONS</i> , Geneva, 2009.
	.5. <i>ITU- RADIO REGULATIONS</i> , Geneva, 2008, ISBN 92-61-12451-8.
T3	.6. <i>INMARSAT MARITIME COMMUNICATIONS HANDBOOK - INMARSAT</i> - London, U.K. febr. 2000.
	.7. <i>ADMIRALTY LIST OF RADIO SIGNALS, COAST RADIO STATIONS</i> , vo1. 1(1), vo1. 1, 2 NP 281(1-2), 2007/2008, publ by UKHO, London, 2008-2009.

	.8. ADMIRALTY LIST OF RADIO SIGNALS, <i>RADIO AIDS TO NAVIGATION, ELECTRONIC POSITION FIXING SYSTEMS, LEGAL TIME AND RADIO TIME SIGNALS</i> vo1. 2, 2007/2008 NP 282, publ by UKHO, London, 2009/2010.
	.9. ADMIRALTY LIST OF RADIO SIGNALS, Maritime Safety Information Services, vo1. 3, 2007/2008, NP 283, publ by UKHO, London, 2009/2010
	.10.ADMIRALTY LIST OF RADIO SIGNALS, <i>METEOROLOGICAL OBSERVATION STATIONS</i> , NP 284, vo1.4, 2007/2008 publ by UKHO, London, 2009/2010.
	.11.ADMIRALTY LIST OF RADIO SIGNALS, <i>GMDSS- GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM</i> , vo1. 5, 2007/2008, NP 285, publ by UK Hydrographic Office(UKHO), London, 2008/2009.
	.12.ADMIRALTY LIST OF RADIO SIGNALS, <i>PILOT SERVICES, VESSEL TRAFFIC, SERVICES AND PORT OPERATIONS</i> , vo1. 6 (1), (2), (3), 2008/2009, London.
	.13.Harmonization of GMDSS requirements for radio installations on board SQLAS-ships (ref. COMSAR Circ. 32 per 02.01-04);
	.14.European Radiocommunications Committee (ERC) Decision of 10 March 1999 on the harmonized examination syllabus for General Operator's Certificate (GOC) and Restricted Operator's Certificate (ROC) (ERC DEC/99(01).
	.15.Inmarsat SafetyNET User's Handbook .

Constanta Maritime University can ensure training for students included in the curricula, by IMO courses and courses for *long life learning*. For trainees outside the university GMDSS GOC is *long life learning*.

GMDSS – GOC Course addresses to Constanta Maritime University students, enrolled in the Navigation Faculty. It is included in the curriculum of 3rd year of studies. The GMDSS –GOC subject is among compulsory subjects in the curriculum.

Training, assessment and examination activities for GMDSS GOC Course are organized according to the Procedures as stated in the CMU QA Manual.



CMU GMDSS Laboratory – Radio equipments



CMU GMDSS Laboratory – SEA GMDSS Real Console



CMU GMDSS Laboratory – GMDSS Simulator